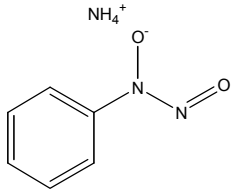
CUPFERRON
CAS No. 135-20-6
First Listed in the *Third Annual Report on Carcinogens*



CARCINOGENICITY

Cupferron is *reasonably anticipated to be a human carcinogen* based on sufficient evidence of carcinogenicity of in experimental animals (NCI 100, 1978). When administered in the diet, cupferron induced hemangiosarcomas, hepatocellular carcinomas, and squamous cell carcinomas of the forestomach in rats of both sexes and carcinomas of the auditory sebaceous gland in female rats. When administered in the diet, cupferron induced hemangiosarcomas in male mice and hepatocellular carcinomas, carcinomas of the auditory sebaceous gland, hemangiosarcomas and hemangiomas, and adenomas of the harderian gland in female mice.

There are no data available to evaluate them carrcinogenicity of cupferron in humans.

PROPERTIES

Cupferron is a creamy-white crystalline solid with a melting point between 163-164 ^{o}C. It is very soluble in water, alcohol, and ether. When heated to decomposition, it emits toxic fumes of ammonia and nitrogen oxides (NO_x).

USE

Cupferron is an analytical reagent that is used to separate tin from zinc, and copper and iron from other metals. In analytical laboratories, cupferron is a reagent used for quantitative determination of vanadates and titanium and colorimetric determination of aluminum (NCI 100, 1978).

PRODUCTION

The USITC has listed one domestic producer of cupferron (*N*-nitrosophenylhydroxylamine, ethanolamine salt) since 1987, with an undisclosed production volume (USITC, 1988-1991, 1993-1995). The 1979 TSCA Inventory identified two companies producing 55,000 lb of cupferron in 1977, with some site limitations. Imports were not reported. The CBI Aggregate was less than 1 million lb (TSCA, 1979). Data on exports are also not available.

EXPOSURE

The primary routes of potential human exposure to cupferron are ingestion and inhalation of the dust from the dry salt. Dermal contact is a secondary route of potential exposure. The risk of possible exposure seems to be greatest for those engaged in analytical or research studies involving use of the chemical. Workers may be potentially exposed to the compound during manufacturing processes. The National Occupational Exposure Survey (1981-1983) indicated that 136 workers, including 39 women, were potentially exposed to cupferron (NIOSH, 1984). This estimate was based only on observations of the actual use of the compound. The National Occupational Hazard Survey, conducted by NIOSH from 1972 to 1974, estimated that 4,000 workers were possibly exposed to cupferron in the workplace (NIOSH, 1976). The Toxic Chemical Release Inventory (EPA) listed four industrial facilities that produced, processed, or otherwise used cupferron in 1988 (TRI, 1990). In compliance with the Community Right-to-Know Program, the facilities reported releases of cupferron to the environment which were estimated to total 900 lb.

REGULATIONS

In 1980 CPSC preliminarily determined that cupferron was not present in consumer products under its jurisdiction. Subsequently, public comment was solicited to verify the accuracy of this information; no comments were received. Pending receipt of new information, CPSC plans no action on this chemical. EPA regulates cupferron as a toxic chemical under the Superfund Amendments and Reauthorization Act (SARA) and subjects it to general threshold limits. Cupferron is subject to reporting and report/recordkeeping rules under SARA and has been proposed to be subject to report/recordkeeping rules under the Resource Conservation and Recovery Act (RCRA) and the Toxic Substances Control Act (TSCA). OSHA regulates cupferron under the Hazard Communication Standard and as a chemical hazard in laboratories. Regulations are summarized in Volume II, Table B-31.